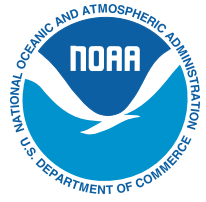


Marine Recreational Fisheries Statistics Survey (MRFSS)



Pacific Coast



The person interviewing you today is conducting the Marine Recreational Fisheries Statistics Survey. Information collected is kept completely confidential. You are protected by the Privacy Act of 1974. Disclosure of your individual information to anyone other than survey personnel is a federal offense.

INTRODUCTION

Marine recreational fisheries contribute significantly to the quality of American life as an important source of fun and food as well as a major contributor to the economic well-being of coastal communities. Fishing is the second most popular form of outdoor recreation in the U.S., and today, millions of saltwater anglers make tens of millions of saltwater fishing trips each year. Any nature-based activity of this magnitude is expected to have a significant impact on the resource and produce substantial social and economic benefits to the nation.

Fishing is the second most popular form of outdoor recreation in the U.S.

In order to protect and enhance marine recreational fisheries for current and future generations, it is imperative that decision-makers have the information necessary to make wise management decisions. The Marine Recreational Fisheries Statistics Survey (MRFSS) is the primary data source concerning marine recreational fishing activity in the U.S. The MRFSS data are used by the National Marine Fisheries Service (NMFS), regional Fishery Management Councils, Interstate Marine Fisheries Commissions, and State Agencies to consider the impact and importance of marine angling in fishery management decisions. *The better the data, the better the decision!*

ABOUT THE MRFSS

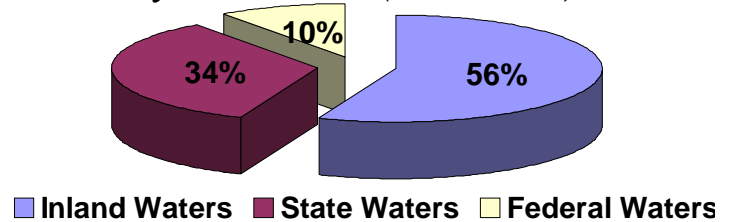
The MRFSS is a nationwide program developed in the late 1970s by leading statisticians and survey design experts to provide a timely and reliable database on marine recreational fishing activity. Thanks to the cooperation of conservation-minded anglers, the MRFSS now encompasses over 20 years of continuous standardized data and represents the most comprehensive, consistent, and scientifically credible picture of marine recreational catch, effort, and participation in the world. The strength of the MRFSS relies on two principles – consistency and comparability. By collecting nation-wide data in the same way since 1979, the MRFSS is used to identify notable changes in recreational catch and effort trends and evaluate the long-term implications of management measures.

The MRFSS identifies changes in recreational catch & effort.

The MRFSS is conducted in all coastal states of the U.S. with the exception of Texas, Alaska, and Hawaii. In all, the MRFSS monitors the angling activity of millions of marine anglers on over 52,000 miles of coast. The survey divides the nation into eight regions defined by similar ecosystems and/or management authorities (see front cover for regional map).

The MRFSS is designed as a complementary two-part survey: telephone and field. Numerous studies have proven this two-pronged approach provides more accurate information than a single survey could. This is because the telephone and field surveys are specifically designed to collect different yet compatible information. The telephone survey is a random sample of over 250,000 households each year and is used to identify households that contain saltwater anglers and estimate marine fishing effort. Catch information is NOT collected over the phone. To collect catch information, field personnel interview anglers (~145,000 in 1998) at thousands of fishing access sites around the country. Field interviews focus on the species, quantity, length, and weight of the catch and whether or not the catch was kept, or released alive or dead. The results of the two surveys are combined to produce an estimate of the total recreational catch by species.

Marine Recreational Fishing Trips by Area Fished (U.S. - 1998)

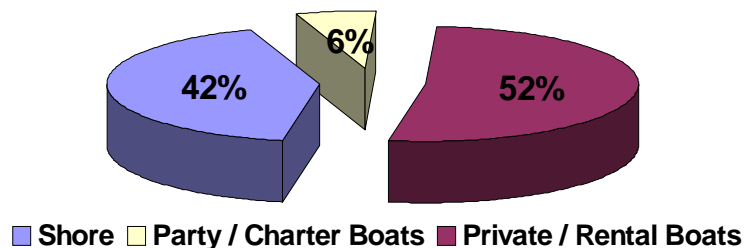


Inland Waters: Enclosed bays, sounds, inlets, rivers, gulfs, etc. with restricted exchange of water with open ocean.

State Waters: Open ocean extending 0 to 3 miles from shore, except West Florida (10 miles).

Federal Waters: Open ocean extending offshore from the outer edge of the State Waters.

Marine Recreational Fishing Trips by Fishing Mode (U.S. - 1998)



Not including Texas, Alaska, and Hawaii, anglers took over 61,806,000 marine recreational fishing trips in the United States.

SOCIAL & ECONOMIC ASPECTS OF MARINE ANGLING

Marine recreational fishing supports diverse industries that provide goods and services to anglers. These include, but are not limited to: bait, tackle, boats and motors, fuel, charter and party boats, hotels, campgrounds, restaurants, and more. Because marine fisheries are so very important to many different user groups and support a variety of related businesses, managers are required to account for the social and economic implications of management options before making regulatory decisions. The objective is to sustain the resource while minimizing the hardship new regulations can cause. To fairly consider the recreational fishing community and supporting industries in this process, social and economic questions are periodically added to the base telephone and field surveys. These questions allow economists and social scientists to understand the overall value of recreational fishing to Americans, how new regulations will affect anglers' fishing behavior, and the economic benefits of marine angling to coastal communities and the nation. Although these questions are sometimes of a personal nature, they help decision-makers understand how management affects you, your peers, and the recreational fishing industry.

The objective is to sustain the resource while minimizing the hardship new regulations can cause.

HOW THE DATA ARE USED

The greatest accomplishment of the MRFSS has been to provide decision-makers the information they need to incorporate the importance and impact of marine angling into the decision making process. For example:

MRFSS data are used to:

- Improve the scientific understanding of many fish species resulting in improved stock assessments. For some species, the MRFSS is the only source of fishery data.
- Assess the magnitude and impact of marine angling, leading to more informed allocation decisions.
- Understand the value of marine angling and its economic impact on coastal communities, and to predict the social and economic implications of new regulations.
- Forecast demand for new angling facilities like fishing piers, marinas, and boat ramps, and to locate these facilities where they will be most effective.

MRFSS data also contribute to:

- Damage assessments for oil spills and other accidents that degrade recreational fisheries.
- Habitat conservation efforts important to the health of fishery resources.
- Inter-agency cooperation and regional management strategies, by providing decision-makers comparable data.

FREQUENTLY ASKED QUESTIONS

How does the NMFS ensure the quality of the data?

Experience in developing and implementing the survey has led to a host of effective quality controls that are now standard operating procedure for the MRFSS. For example:

- Interviewers are well trained before entering the field. Training on the survey process, interviewing skills, and fish identification continues throughout employment.
- New interviewers are observed in the field before receiving solo assignments and are then randomly observed on-site at least twice a year. Performance is continually evaluated.
- At least 10% of all field interviews on the Atlantic and Gulf coasts are re-contacted by telephone to verify the data. That is why phone numbers are requested in the field.
- At least 10% of all telephone interviews are silently monitored by supervisors.
- Data entry programs prevent accidentally entering impossible and illogical values.
- All questionable catch and effort data are automatically flagged by computer and thoroughly investigated.

As you can see, great effort is taken to ensure decision-makers are provided with only the highest quality data.



How can the survey be accurate if I fish 3 or 4 times a week and I have never been surveyed?

There are simply too many marine anglers and too much coastline to monitor all saltwater fishing trips. The cost would exceed the entire National Marine Fisheries Service budget. Like most survey research, such as political polls, the MRFSS relies on random sampling. If a survey is truly random, there is no guarantee you will ever be interviewed. As a matter of fact, it is expected that some anglers will be interviewed two or more times a year and other anglers will never be interviewed.

Who conducts the MRFSS survey for the NMFS?

On the Atlantic coast north of Florida, the intercept survey is conducted by MACRO International, a large and experienced survey research company. MACRO also conducts the telephone survey for all MRFSS states and regions. In Gulf and Pacific coast states, the intercept survey is conducted by the Gulf and Pacific States Marine Fisheries Commissions and their member states' marine fisheries agencies.

Do recreational anglers really affect fish stocks?

In 1998, over 7.5 million anglers harvested an estimated 195 million pounds of fish on 60 million marine recreational fishing trips. To exclude the impact of recreational anglers from management decisions would be irresponsible. For example, the table and graph below show that for 7 of the 10 species of fish most frequently harvested by recreational anglers in 1998, the recreational harvest exceeds the commercial harvest.

Can I access the MRFSS database and do my own queries on the data?

Most of the data used to create the charts and graphs in this booklet are available on this easy to use website - www.st.nmfs.gov/st1/recreational. Just click on "do your own query" and go from there. You can access catch, effort and participation data and retrieve statistical estimates at the national, regional or state level.

What is the difference between caught & harvested fish?

"Harvested" refers to any fish not released alive, including fish used for bait or released dead.

"Caught" refers to the sum of all harvested fish and those fish released alive.

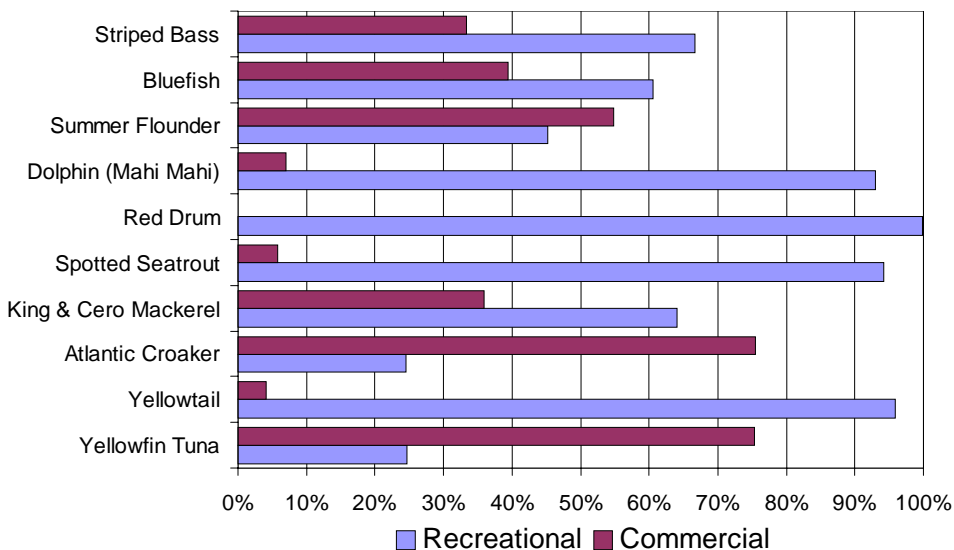
Do field interviewers report to enforcement agents?

No, they do not report to enforcement agents! The information you provide is kept completely confidential. You are protected by the Privacy Act of 1974. Disclosure of your personal information to anyone other than survey personnel is a federal offense.



***Top Ten Species (by weight) Harvested by Marine Recreational Anglers:
Comparison With Commercial Sector by Harvest Weight (1998)***

	Recreational Commercial	
	(Harvest Weight X 1,000 lbs)	
Striped Bass	13,463	6,715
Bluefish	12,778	8,299
Summer Flounder	12,523	15,170
Dolphinfish	12,113	917
Red Drum	9,850	12
Spotted Seatrout	9,544	585
King & Cero Mackerel	8,721	4,881
Atlantic Croaker	8,213	25,304
Yellowtail	5,698	245
Yellowfin Tuna	5,607	17,124



PRECISION OF MRFSS RESULTS

The MRFSS was designed to collect data appropriate for generating catch and effort estimates at the regional level. In other words, the data could be used to estimate the number of bluefish (or other species) caught in a particular region like the North or Mid Atlantic. However, since 1979, there has been a growing need to generate reliable estimates at the state level and in some cases even the bay or county level. Estimates for these smaller units can contribute to the equitable allocation of marine fishery resources between states, as well as provide state, regional, and federal managers with better data to base their decisions on. Although the MRFSS budget has grown in the 1990s, resulting in larger sample sizes that meet state needs in some areas, generating precise estimates for state and sub-state levels sometimes requires more surveys be completed in that state, bay, or county than the MRFSS federal budget provides.

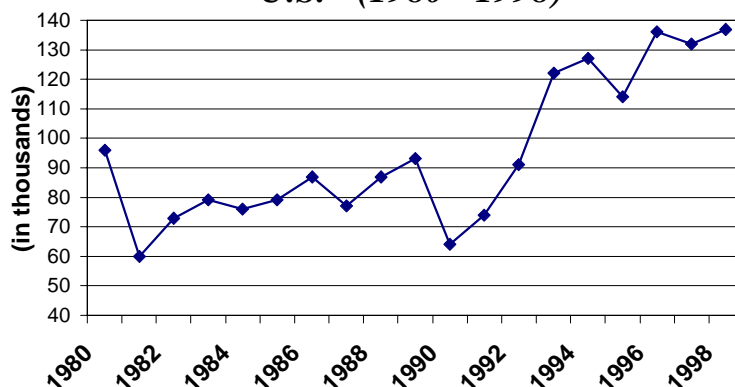
State partnerships help to improve the precision of MRFSS statistical estimates.

Some states have partnered with the NMFS and increased sample sizes through additional funding or use of state interviewers. The additional samples often target fishery issues important to that state and increase the precision of MRFSS statistical estimates.

THANK YOU!

The MRFSS team would like to thank the millions of anglers that have participated in the survey over the last 20 years. By spending a few minutes answering questions and allowing your catch to be examined, you are making a valuable contribution to marine fisheries management and are helping to ensure quality marine angling for future generations. We value your support and appreciate the crucial role you play in marine fisheries management!

Number of Completed MRFSS Field Surveys U.S. - (1980 - 1998)



U.S. Department of Commerce National Oceanic & Atmospheric Administration National Marine Fisheries Service, F/ST1



1315 East-West Highway
Silver Spring, Maryland 20910



Maury F. Osborn
MRFSS Program Manager

Statisticians - Dave Van Voorhees Ph.D., Alan Lowther Ph.D., & Tom Sminkey Ph.D.

Biologists - Terri Muller & Kirk Gillis

Economists - Amy Gautam Ph.D., Rob Hicks Ph.D., & Brad Gentner

FISH ILLUSTRATIONS

From: *McClane's Field Guide to Saltwater Fishes of North America* Edited by A.J. McClane © 1965 by Henry Holt and Co., Reprinted by permission of Henry Holt and Company, LLC.

(Atlantic Cod, Atlantic Croaker, Atlantic Mackerel, Black Rockfish, Blue Rockfish, Bluefish, Bocaccio, California Sheephead, Lingcod, Snook, Striped Bass, Weakfish, White Seabass, and Yellowtail)

From: *Fisherman's Guide - Fishes of the Southeastern United States* by Manooch, C. S., & Raver, D. © 1984 by Charles S. Manooch, III and Duane Raver, Jr., Reprinted by permission of Charles S. Manooch.

(Dolphin, Gag, King Mackerel, Red Drum, Red Snapper, Spotted Seatrout, and Summer Flounder)

PHOTOGRAPHS

Man with Permit, Girl with Red Drum - **Charles Gardner**: Boat Ramp, Beach Chair Anglers, Anglers on Rocks, Dad & Kids, Diver with Striper, Three Women with Codfish - **Kirk Gillis**: Charter Sportsmen - **Robyn Wingrove**: Black & White Map Insert - **North Carolina Sea Grant**: Back

Cover - **Scott Taylor**: Biological Sampling - NMFS.

MRFSS Facts and Figures

Washington 1998



Five Frequently Encountered Fish 1998					
Species	Number Caught (Thousands)	Number Harvested (Thousands)	Pounds Harvested (Thousands)	Number Released (Thousands)	Mean Length (Harvested Fish)
BLACK ROCKFISH	222	217	666	5	15.6"
PACIFIC SANDDAB	174	162	69	12	10.1"
LINGCOD	138	41	327	97	25.9"
COPPER ROCKFISH	106	92	131	14	12.8"
SURF SMELT	2,537	2,528	160	9	5.8"

Length data are reported as fork length. (For most species = tip of snout to fork in tail.)

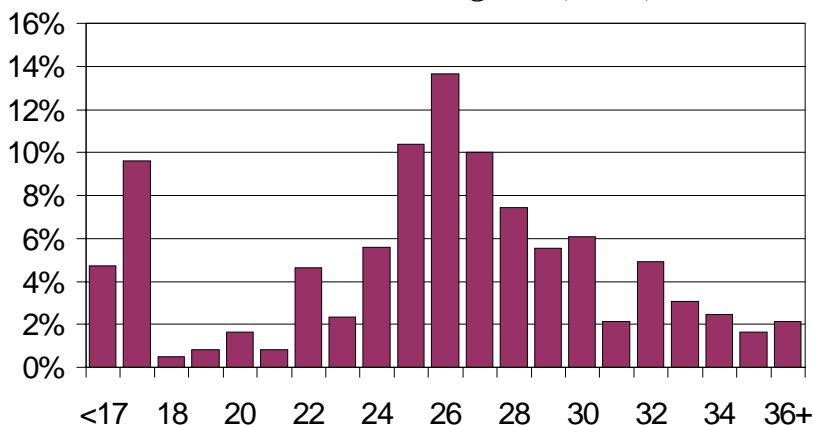
Lingcod

Ophiodon elongatus



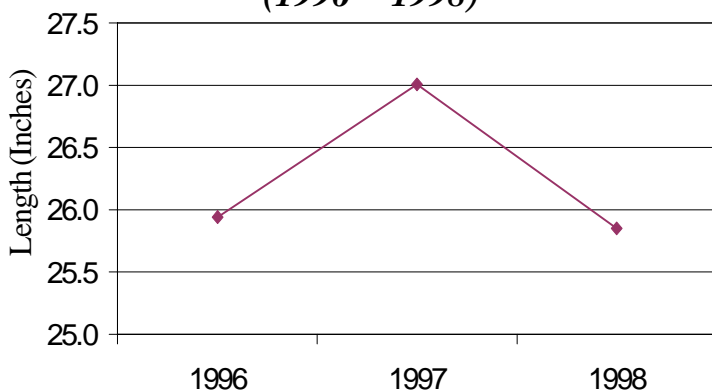
Since 1996, MRFSS field personnel have identified over 95 species of marine fish landed in Washington.

Length Distribution (in inches) Harvested Lingcod (1998)

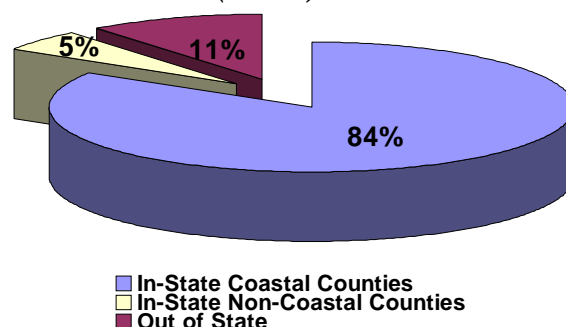


In 1998, over 41% of harvested lingcod averaged between 25 and 28 inches in length.

Average Length of Harvested Lingcod (1996 - 1998)

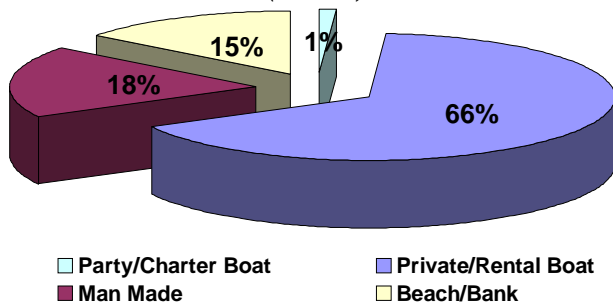


Washington Anglers' Area of Residence (1998)



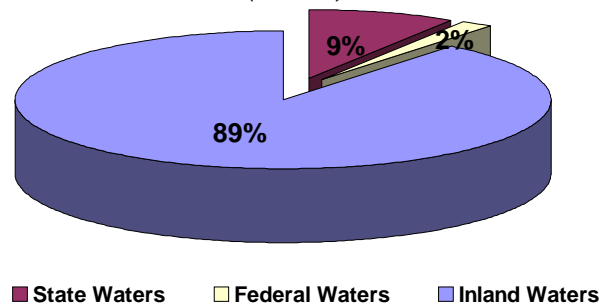
In 1998, over 388,000 anglers participated in Washington's Marine Recreational Fishery.

Saltwater Fishing Trips by Fishing Mode (1998)

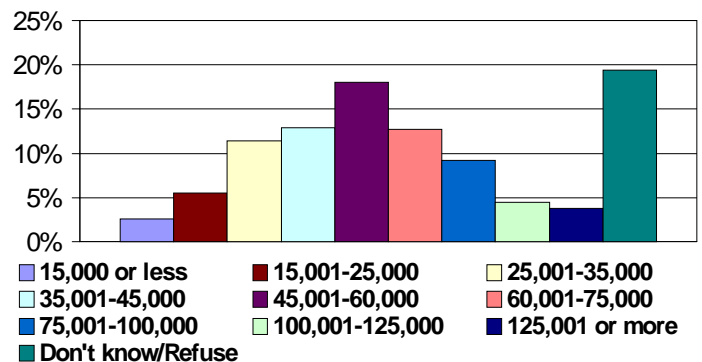


In 1998, anglers took nearly 1.5 million saltwater fishing trips in Washington.

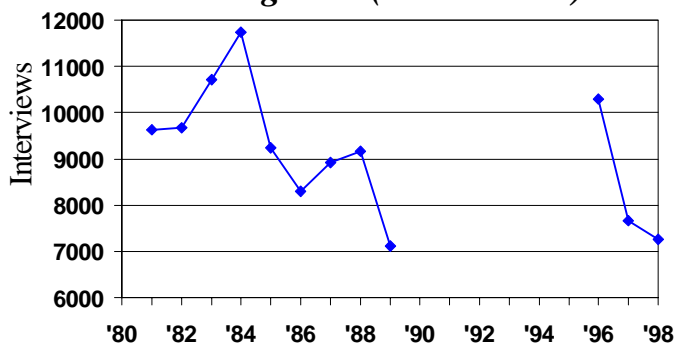
Saltwater Fishing Trips by Area Fished (1998)



Income Distribution for Washington Anglers (1997)



Number of Completed Field Surveys Washington (1980 - 1998)

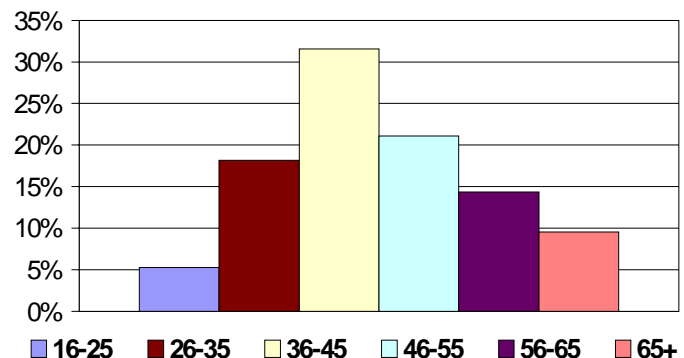


In 1998, MRFSS field personnel completed 7,264 surveys in Washington.

Due to funding constraints, the MRFSS was not conducted on the Pacific Coast from 1990-1992. The Washington Department of Fish and Wildlife conducted their own state survey from 1993 - 1995.

Since 1993, the MRFSS has been conducted as a component of Pacific RecFIN, which includes specialized state surveys for salmon fishing and ocean boat fishing in certain time periods.

Age Distribution of Washington Anglers (1997)



WASHINGTON MARINE RECREATIONAL FISHING INFORMATION

Washington Department of Fish and Wildlife (DFW) - Fish Program
(360) 902-2700 www.wa.gov/wdfw/fishcorn.htm

Washington DFW - Fish Program Rules and Regulations
(360) 902-2500 www.wa.gov/wdfw/fish/regs/fishregs.htm

Pacific Fishery Management Council
(503) 326-6352 www.pcouncil.org

Pacific States Marine Fisheries Commission
(503) 326-7025 www.psmfc.org

To Report Fish Kills or Oil Spills Call: (800) 258-5990
To Report Illegal Fishing Call: (800) 477-6224

MRFSS Facts and Figures

Oregon 1998



Five Frequently Encountered Fish 1998					
Species	Number Caught (Thousands)	Number Harvested (Thousands)	Pounds Harvested (Thousands)	Number Released (Thousands)	Mean Length (Harvested Fish)
BLACK ROCKFISH	801	801	1,532	0	14.6"
BLUE ROCKFISH	232	232	282	0	12.2"
LINGCOD	100	46	385	54	27.4"
CANARY ROCKFISH	63	63	108	0	13.8"
YELLOWTAIL ROCKFISH	60	60	91	0	13.8"

Length data are reported as fork length. (For most species = tip of snout to fork in tail.)

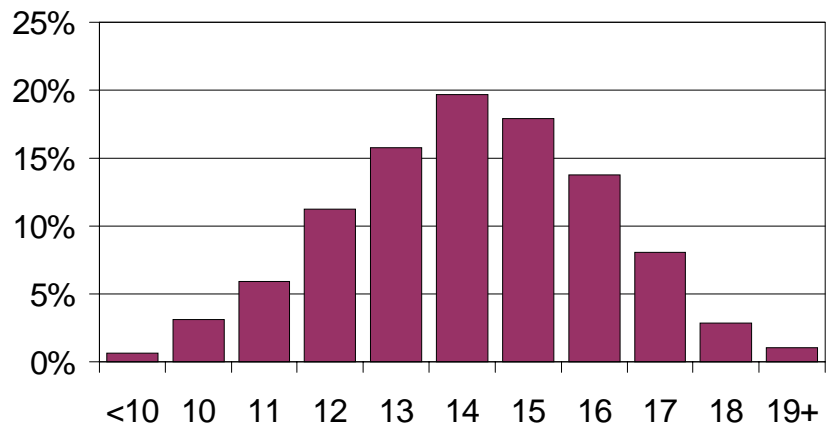
Black Rockfish

Sebastes melanops



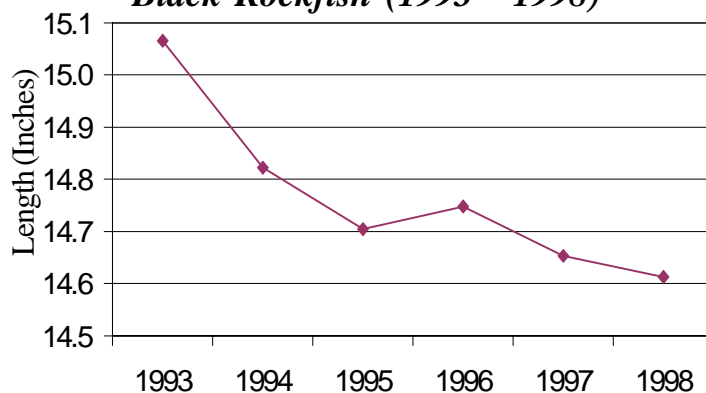
Since 1993, MRFSS field personnel have identified over 74 species of marine fish landed in Oregon.

Length Distribution (in inches) Harvested Black Rockfish (1998)

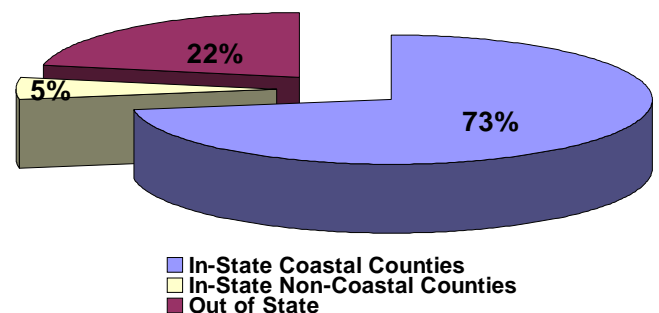


In 1998, over 53% of harvested black rockfish averaged between 13 and 15 inches in length.

Average Length of Harvested Black Rockfish (1993 - 1998)

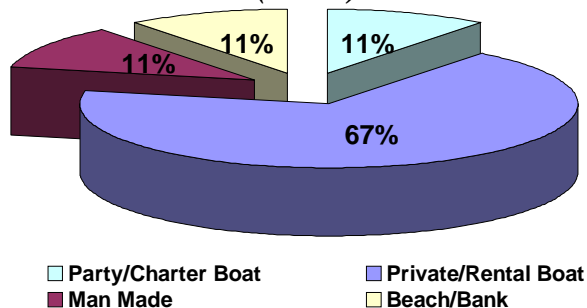


Oregon Anglers' Area of Residence (1998)



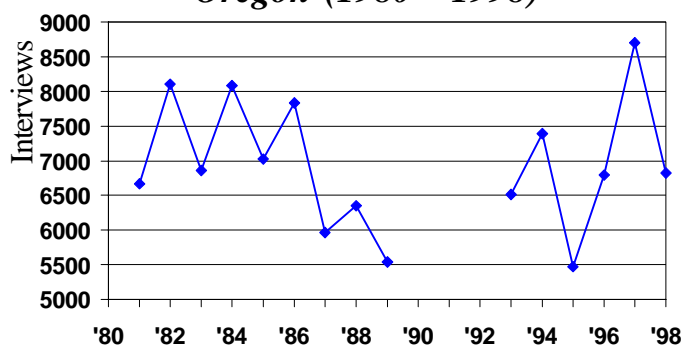
In 1998, over 231,000 anglers participated in Oregon's Marine Recreational Fishery.

Saltwater Fishing Trips by Fishing Mode (1998)



In 1998, anglers took over 649,000 saltwater fishing trips in Oregon.

Number of Completed Field Surveys Oregon (1980 - 1998)

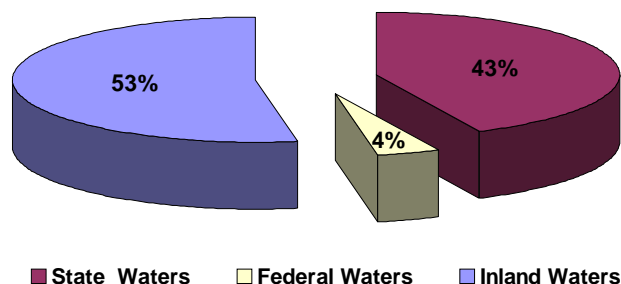


In 1998, MRFSS field personnel completed 6,824 surveys in Oregon.

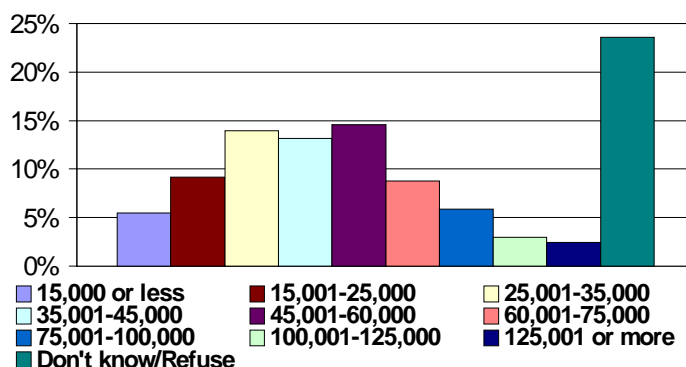
Due to funding constraints, the MRFSS was not conducted on the Pacific Coast from 1990-1992.

Since 1993, the MRFSS has been conducted as a component of Pacific RecFIN, which includes specialized state surveys for salmon fishing and ocean boat fishing in certain time periods.

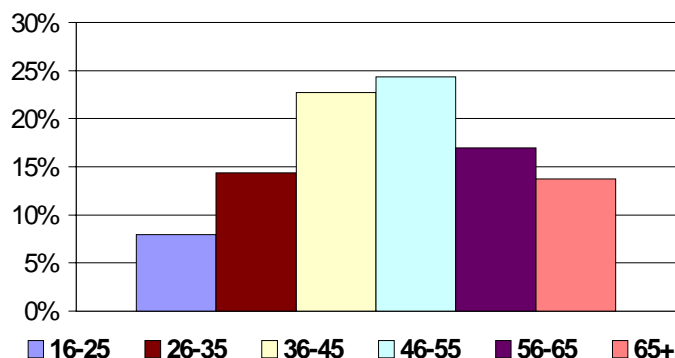
Saltwater Fishing Trips by Area Fished (1998)



Income Distribution for Oregon Anglers (1997)



Age Distribution of Oregon Anglers (1997)



OREGON MARINE RECREATIONAL FISHING INFORMATION

Oregon Department of Fish and Wildlife
(ODFW) - Marine Resources Program
(541) 867-4741

www.hmsc.orst.edu/odfw

Oregon DFW - Marine Resources Program
Rules and Regulations

Licensing Office: (503) 872-5275

www.hmsc.orst.edu/odfw/regs/regulations.html

Pacific Fishery Management Council
(503) 326-6352 www.pcouncil.org

Pacific States Marine Fisheries Commission
(503) 326-7025 www.psmfc.org

MRFSS Facts and Figures

Northern California 1998



Five Frequently Encountered Fish 1998					
Species	Number Caught (Thousands)	Number Harvested (Thousands)	Pounds Harvested (Thousands)	Number Released (Thousands)	Mean Length (Harvested Fish)
BLUE ROCKFISH	649	574	547	75	11.3"
STRIPED BASS	308	89	543	219	23.0"
YELLOWTAIL ROCKFISH	177	176	262	1	13.5"
BLACK ROCKFISH	163	160	261	3	13.3"
LINGCOD	114	69	542	45	25.7"

Length data are reported as fork length. (For most species = tip of snout to fork in tail.)

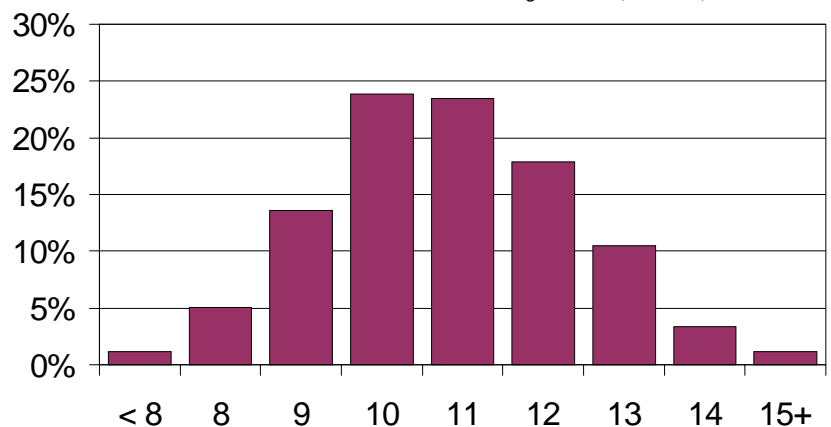
Blue Rockfish

Sebastes mystinus



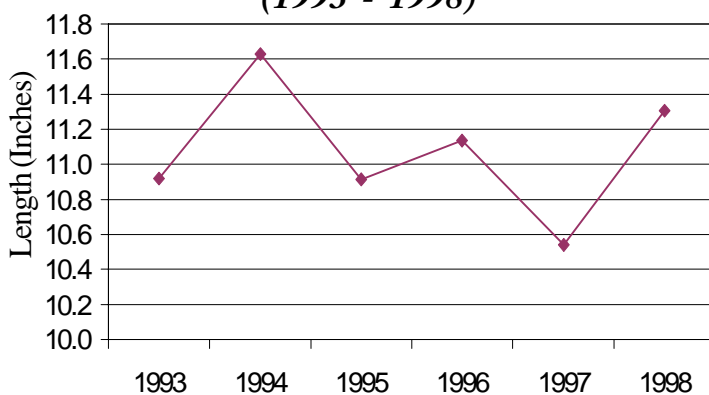
Since 1993, MRFSS field personnel have identified over 120 species of marine fish landed in Northern California.

Length Distribution (in inches) Harvested Blue Rockfish (1998)

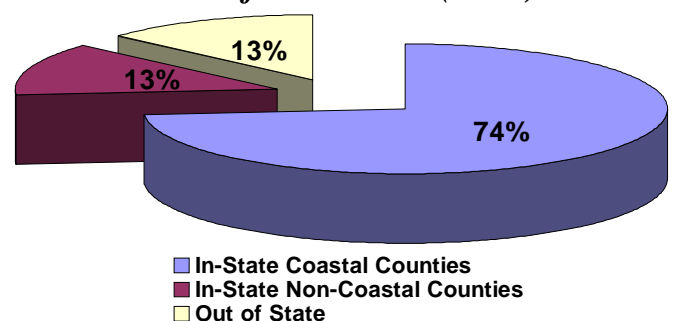


In 1998, over 65% of harvested blue rockfish averaged between 10 and 12 inches in length.

Average Length of Harvested Blue Rockfish (1993 - 1998)

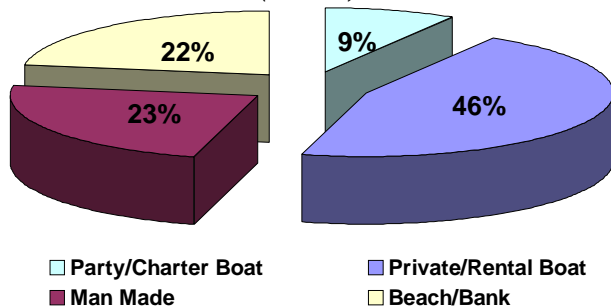


Northern California Anglers' Area of Residence (1998)



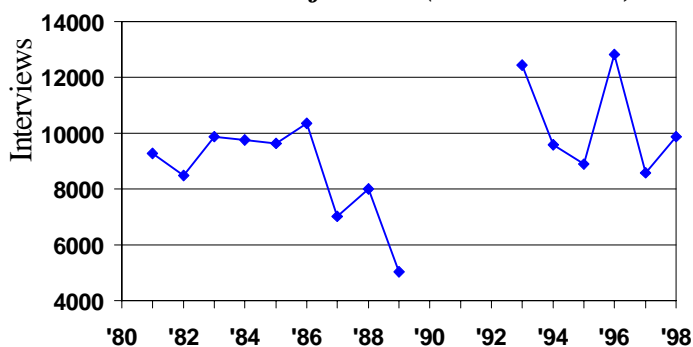
In 1998, nearly 439,000 anglers participated in Northern California's Marine Recreational Fishery.

Saltwater Fishing Trips by Fishing Mode (1998)



In 1998, anglers took over 1.9 million saltwater fishing trips in Northern California.

Number of Completed Field Surveys Northern California (1980 - 1998)

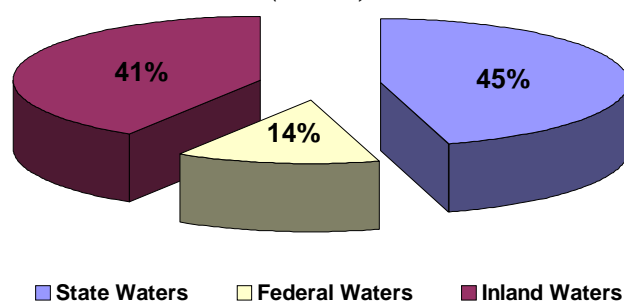


In 1998, MRFSS field personnel completed 9,886 surveys in Northern California.

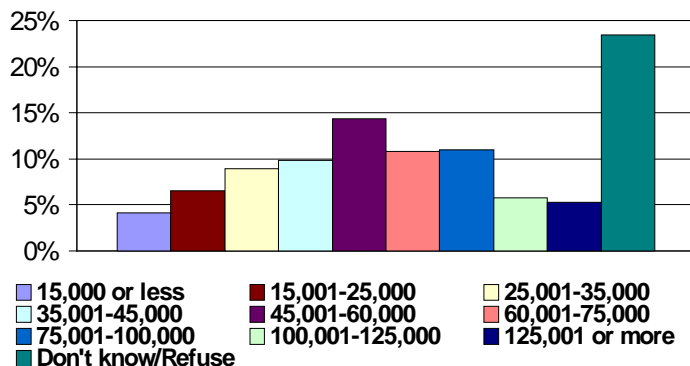
Due to funding constraints, the MRFSS was not conducted on the Pacific Coast from 1990-1992.

Since 1993, the MRFSS has been conducted as a component of Pacific RecFIN, which includes specialized state surveys for salmon fishing and ocean boat fishing in certain time periods.

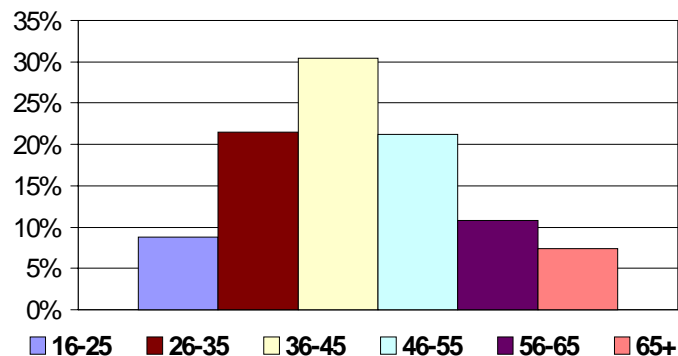
Saltwater Fishing Trips by Area Fished (1998)



Income Distribution for California Anglers (1997)



Age Distribution of California Anglers (1997)



Age and income information is for all California, not just Northern California.

CALIFORNIA MARINE RECREATIONAL FISHING INFORMATION

California Department of Fish and Game (DFG) - Marine Resources Division
(831) 649-2870

www.dfg.ca.gov/Mrd

California DFG - Marine Resources Division
Rules and Regulations

Report Violations: 1-888-DFG-CALTIP

www.dfg.ca.gov/regs.html

Pacific Fishery Management Council
(503) 326-6352 www.pcouncil.org

Pacific States Marine Fisheries Commission
(503) 326-7025 www.psmfc.org

MRFSS Facts and Figures

Southern California 1998



Five Frequently Encountered Fish 1998					
Species	Number Caught (Thousands)	Number Harvested (Thousands)	Pounds Harvested (Thousands)	Number Released (Thousands)	Mean Length (Harvested Fish)
CHUB MACKEREL	2,949	1,296	968	1,653	11.3"
KELP BASS	1,222	326	511	896	14.2"
PACIFIC BARRACUDA	1,200	449	2,055	751	29.7"
BARRED SANDBASS	994	408	685	586	14.7"
YELLOWTAIL	760	673	5,698	87	25.5"

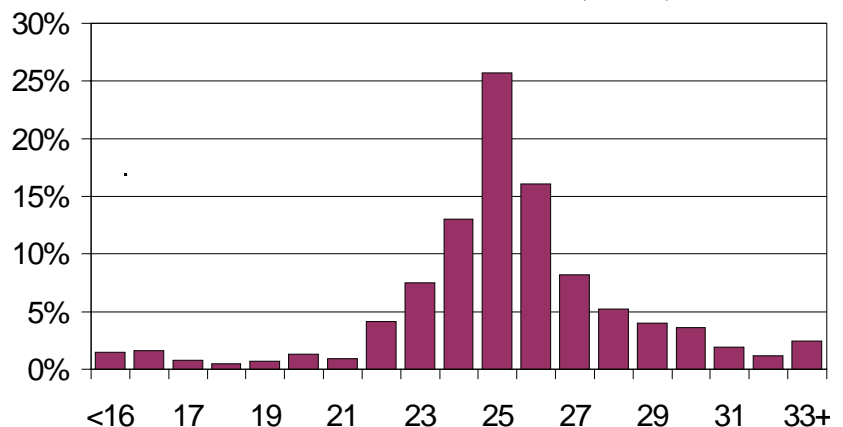
Length data are reported as fork length. (For most species = tip of snout to fork in tail.)

Yellowtail
Seriola lalandi



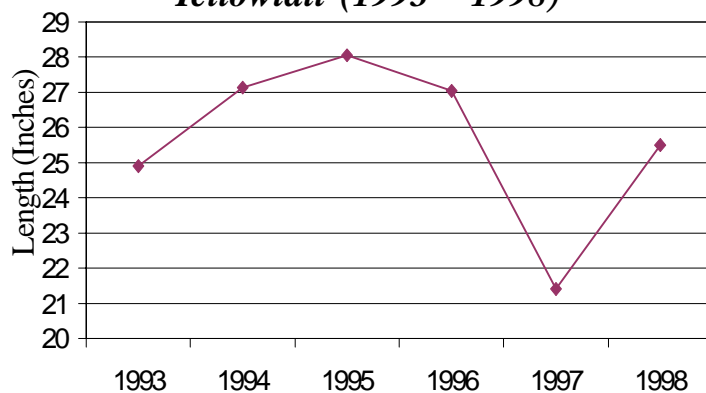
Since 1993, MRFSS field personnel have identified over 145 species of marine fish landed in Southern California.

Length Distribution (in inches)
Harvested Yellowtail (1998)

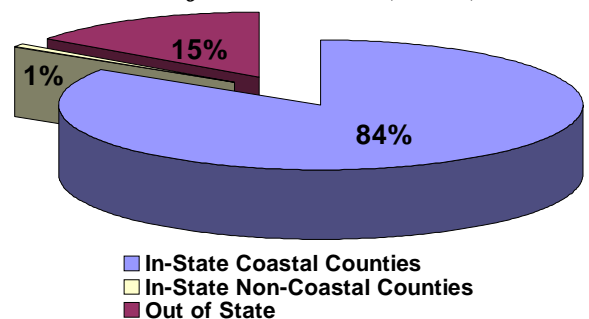


In 1998, nearly 55% of harvested yellowtail averaged between 24 and 26 inches in length.

Average Length of Harvested Yellowtail (1993 - 1998)

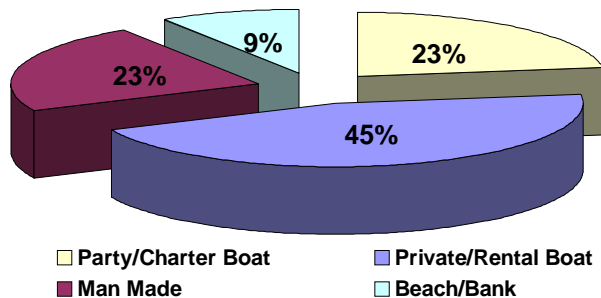


Southern California Anglers' Area of Residence (1998)



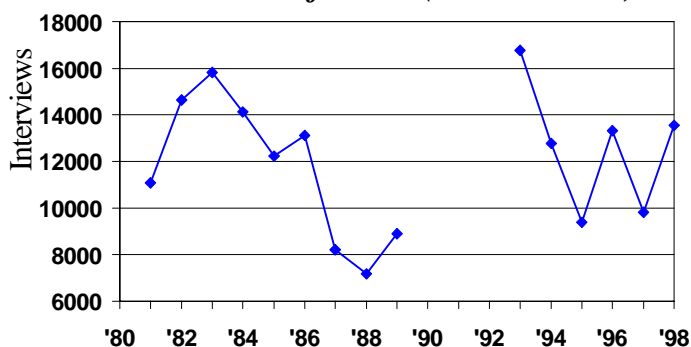
In 1998, over 922,000 anglers participated in Southern California's Marine Recreational Fishery.

Saltwater Fishing Trips by Fishing Mode (1998)



In 1998, anglers took nearly 3.0 million saltwater fishing trips in Southern California.

Number of Completed Field Surveys Southern California (1980 - 1998)

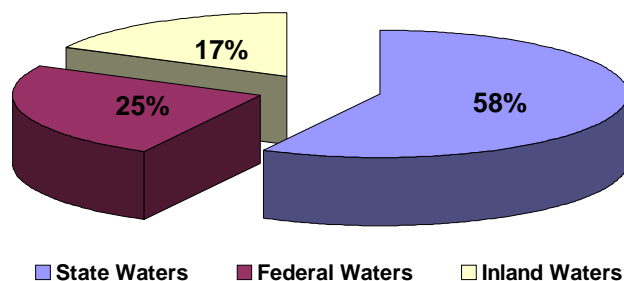


In 1998, MRFSS field personnel completed 13,543 surveys in Southern California.

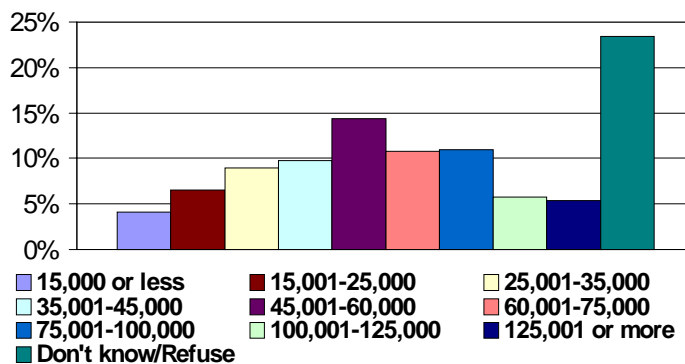
Due to funding constraints, the MRFSS was not conducted on the Pacific Coast from 1990-1992.

Since 1993, the MRFSS has been conducted as a component of Pacific RecFIN, which includes specialized state surveys for salmon fishing and ocean boat fishing in certain time periods.

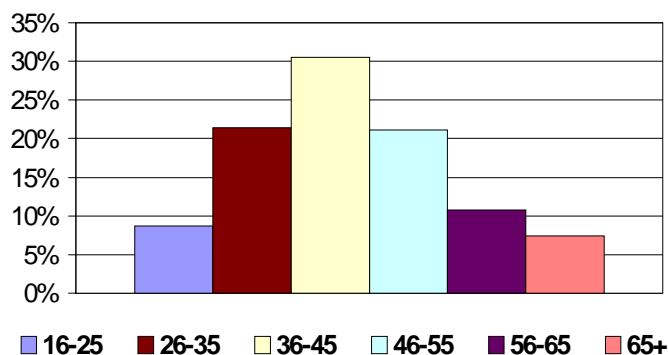
Saltwater Fishing Trips by Area Fished (1998)



Income Distribution for California Anglers (1997)



Age Distribution of California Anglers (1997)



Age and income information is for all California, not just Southern California.

CALIFORNIA MARINE RECREATIONAL FISHING INFORMATION

California Department of Fish and Game (DFG) - Marine Resources Division
(831) 649-2870 www.dfg.ca.gov/Mrd

California DFG - Marine Resources Division
Rules and Regulations

Report Violations: 1-888-DFG-CALTIP
www.dfg.ca.gov/regs.html

Pacific Fishery Management Council
(503) 326-6352 www.pcouncil.org

Pacific States Marine Fisheries Commission
(503) 326-7025 www.psmfc.org



Check Out These Great Web-Sites

Prepare for Your Next Fishing Trip

Tide Predictions by State and Area - <http://co-ops.nos.noaa.gov/tp4days.html>
 U.S. Weather Forecasts by City - <http://weather.noaa.gov/weather/ccus.html>
 Marine Weather Forecasts - <http://weather.noaa.gov/weather/marine/marine.html>
 Moon Phases & Sun or Moon Rise and Set Times - <http://aa.usno.navy.mil/AA>
 Winds, Currents & Water Temperatures - www.ndbc.noaa.gov/Maps/wrldmap.shtml

Recreational Fishery Data Sources

Marine Recreational Fishery Statistics Survey - www.st.nmfs.gov/st1/recreational/
 Recreational Fisheries Information Network - www.psmfc.org/recfin
 Atlantic Coastal Cooperative Statistics Program - www.accsp.org

General NMFS Information

NMFS Headquarters - www.nmfs.gov
 Office of Intergovernmental & Recreational Fisheries - www.nmfs.gov/irf/irf.html

NMFS Regional Offices

Northeast Regional Office - (978) 281-9300 www.nero.nmfs.gov/ro/doc/nero.html
 Southeast Regional Office - (727) 570-5301 www.caldera.sero.nmfs.gov
 Northwest Regional Office - (206) 526-6150 www.nwr.noaa.gov
 Southwest Regional Office - (562) 980-4000 <http://swr.ucsd.edu>

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